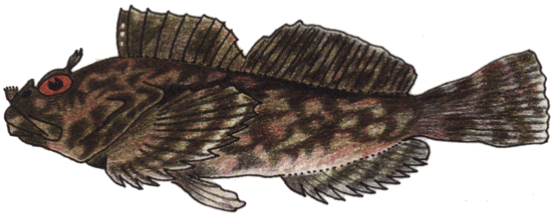
Cabezon, *Scorpaenichthys marmoratus*
1993-1999 Commercial Catch by Ports & Blocks



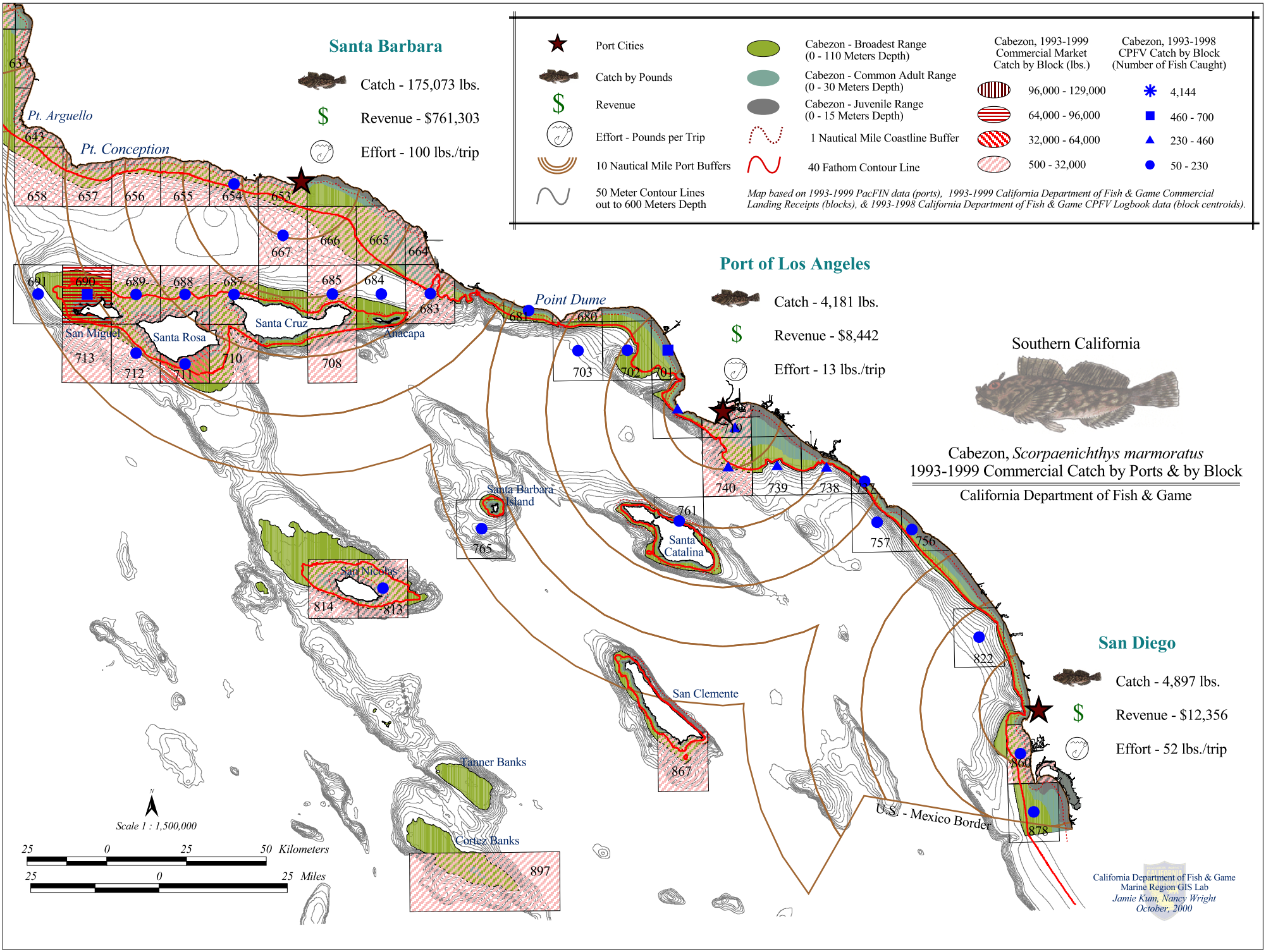
Marine Fishery Profiles
Volume 1:Nearshore

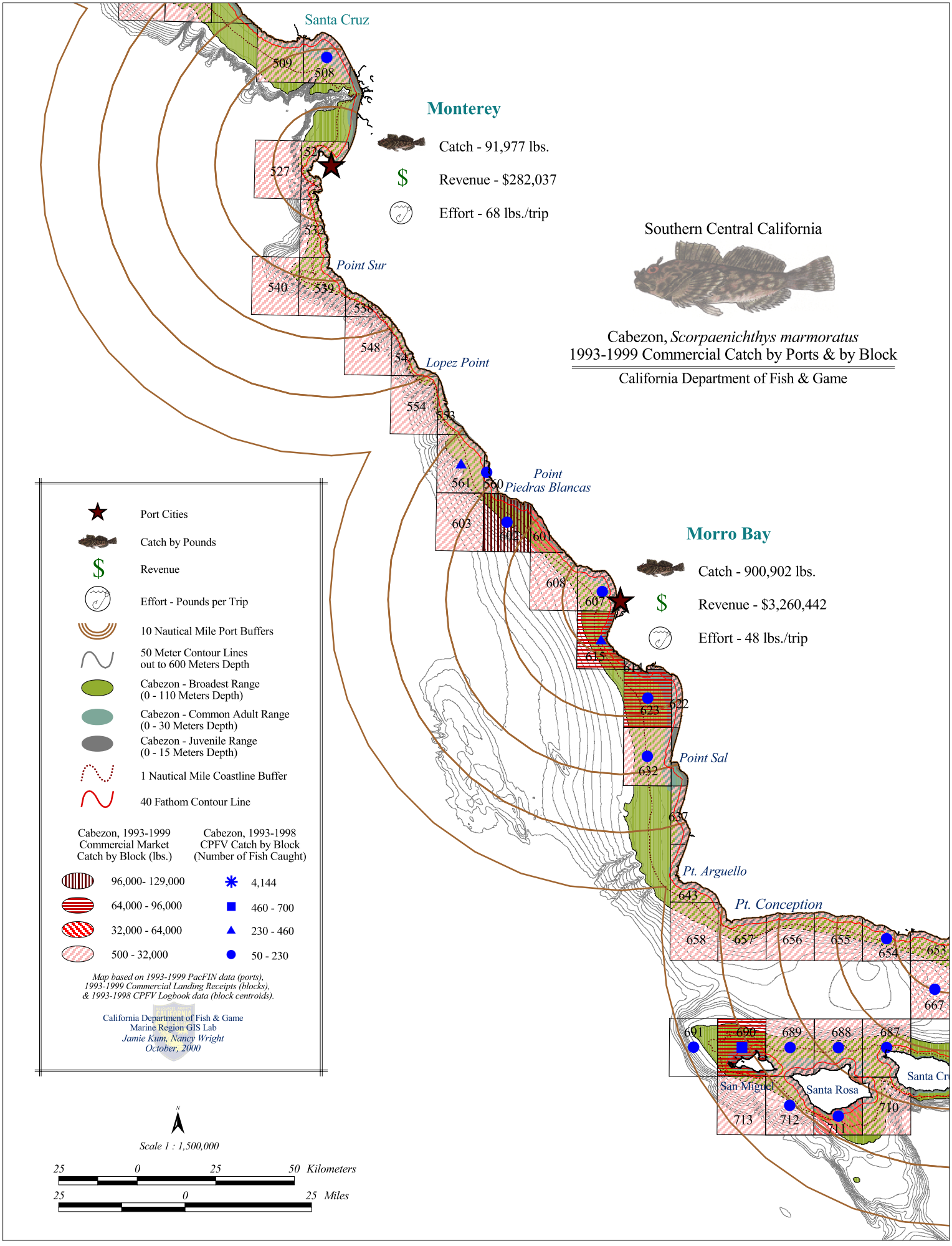
Marine Region GIS Lab

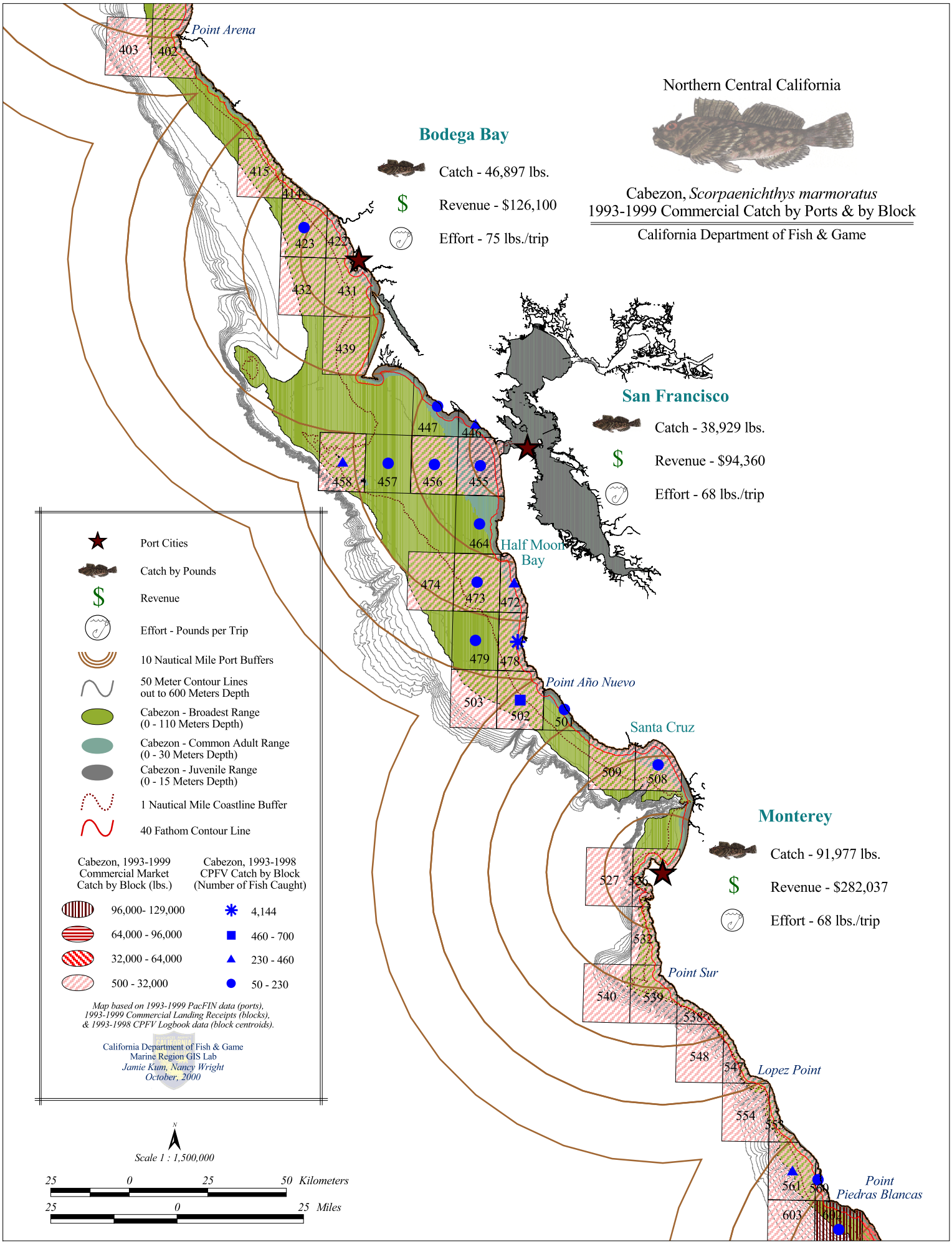
Nancy Wright
Jamie Kum
Chad King
Eric Knaggs
Bob Leos
Colleena Perez

California Department of Fish & Game
Marine Region

December 2000


Santa Barbara
Catch - 175,073 lbs.
Revenue - $761,303
Effort - 100 lbs./trip
Port Cities
Catch by Pounds
Revenue
Effort - Pounds per Trip
10 Nautical Mile Port Buffers
50 Meter Contour Lines out to 600 Meters Depth
Cabezon - Broadest Range (0 - 110 Meters Depth)
Cabezon - Common Adult Range (0 - 30 Meters Depth)
Cabezon - Juvenile Range (0 - 15 Meters Depth)
1 Nautical Mile Coastline Buffer
40 Fathom Contour Line
Cabezon, 1993-1999 Commercial Market Catch by Block (lbs.)
96,000 - 129,000
64,000 - 96,000
32,000 - 64,000
500 - 32,000
Cabezon, 1993-1998 CPFV Catch by Block (Number of Fish Caught)
4,144
460 - 700
230 - 460
50 - 230
Map based on 1993-1999 PacFIN data (ports), 1993-1999 California Department of Fish & Game Commercial Landing Receipts (blocks), & 1993-1998 California Department of Fish & Game CPFV Logbook data (block centroids).
Pt. Arguello
Pt. Conception
Point Dume
Port of Los Angeles
Catch - 4,181 lbs.
Revenue - $8,442
Effort - 13 lbs./trip
Southern California
Cabezon, Scorpaenichthys marmoratus
1993-1999 Commercial Catch by Ports & by Block
California Department of Fish & Game
San Miguel
Santa Rosa
Santa Cruz
Anacapa
Santa Barbara Island
Santa Catalina
San Nicolas
San Clemente
Tanner Banks
Cortez Banks
San Diego
Catch - 4,897 lbs.
Revenue - $12,356
Effort - 52 lbs./trip
U.S. - Mexico Border
Scale 1 : 1,500,000
25 0 25 50 Kilometers
25 0 25 Miles
California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
October, 2000


Santa Cruz
509
508
Monterey
Catch - 91,977 lbs.
$
Revenue - $282,037
Effort - 68 lbs./trip
526
527
532
Point Sur
540
539
538
548
547
Lopez Point
554
553
561
560
Point
Piedras Blancas
603
602
601
608
607
615
614
623
622
Point Sal
632
637
Pt. Arguello
643
Pt. Conception
658
657
656
655
654
655
667
691
690
689
688
687
San Miguel
Santa Rosa
Santa Cr
713
712
711
710
Southern Central California
Cabezon, Scorpaenichthys marmoratus
1993-1999 Commercial Catch by Ports & by Block
California Department of Fish & Game
Morro Bay
Catch - 900,902 lbs.
$
Revenue - $3,260,442
Effort - 48 lbs./trip
Port Cities
Catch by Pounds
$
Revenue
Effort - Pounds per Trip
10 Nautical Mile Port Buffers
50 Meter Contour Lines
out to 600 Meters Depth
Cabezon - Broadest Range
(0 - 110 Meters Depth)
Cabezon - Common Adult Range
(0 - 30 Meters Depth)
Cabezon - Juvenile Range
(0 - 15 Meters Depth)
1 Nautical Mile Coastline Buffer
40 Fathom Contour Line
Cabezon, 1993-1999
Commercial Market
Catch by Block (lbs.)
96,000- 129,000
64,000 - 96,000
32,000 - 64,000
500 - 32,000
Cabezon, 1993-1998
CPFV Catch by Block
(Number of Fish Caught)
4,144
460 - 700
230 - 460
50 - 230
Map based on 1993-1999 PacFIN data (ports),
1993-1999 Commercial Landing Receipts (blocks),
& 1993-1998 CPFV Logbook data (block centroids).
California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
October, 2000
N
Scale 1 : 1,500,000
25 0 25 50 Kilometers
25 0 25 Miles


Northern Central California
Cabezon, *Scorpaenichthys marmoratus*
1993-1999 Commercial Catch by Ports & by Block
California Department of Fish & Game
Bodega Bay
Catch - 46,897 lbs.
Revenue - $126,100
Effort - 75 lbs./trip
San Francisco
Catch - 38,929 lbs.
Revenue - $94,360
Effort - 68 lbs./trip
Monterey
Catch - 91,977 lbs.
Revenue - $282,037
Effort - 68 lbs./trip
Point Arena
Half Moon Bay
Point Año Nuevo
Santa Cruz
Point Sur
Lopez Point
Point Piedras Blancas
403
402
415
414
423
422
432
431
439
447
446
458
457
456
455
464
474
473
472
479
478
503
502
501
509
508
527
536
532
540
539
538
548
547
554
553
561
560
603
602
Port Cities
Catch by Pounds
Revenue
Effort - Pounds per Trip
10 Nautical Mile Port Buffers
50 Meter Contour Lines out to 600 Meters Depth
Cabezon - Broadest Range (0 - 110 Meters Depth)
Cabezon - Common Adult Range (0 - 30 Meters Depth)
Cabezon - Juvenile Range (0 - 15 Meters Depth)
1 Nautical Mile Coastline Buffer
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Cabezon, 1993-1999 Commercial Market Catch by Block (lbs.)
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Cabezon, 1993-1998 CPFV Catch by Block (Number of Fish Caught)
4,144
460 - 700
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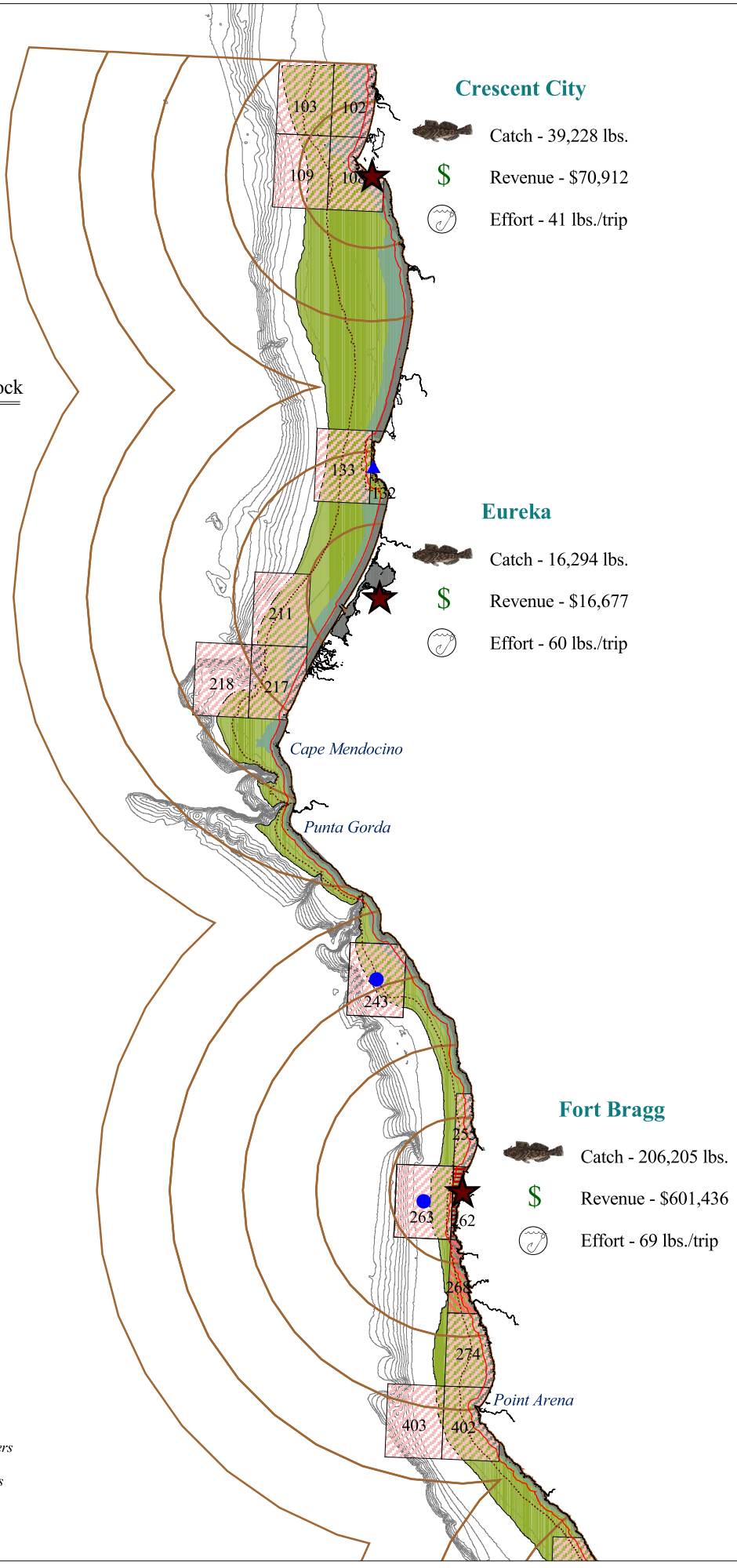
Map based on 1993-1999 PacFIN data (ports), 1993-1999 Commercial Landing Receipts (blocks), & 1993-1998 CPFV Logbook data (block centroids).
California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
October, 2000
N
Scale 1 : 1,500,000
25 0 25 50 Kilometers
25 0 25 Miles

Northern California

Cabezon, *Scorpaenichthys marmoratus*
1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game



- Port Cities
- Catch by Pounds
- $ Revenue
- Effort - Pounds per Trip
- 10 Nautical Mile Port Buffers
- 50 Meter Contour Lines out to 600 Meters Depth
- Cabezon - Broadest Range (0 - 110 Meters Depth)
- Cabezon - Common Adult Range (0 - 30 Meters Depth)
- Cabezon - Juvenile Range (0 - 15 Meters Depth)
- 1 Nautical Mile Coastline Buffer
- 40 Fathom Contour Line

Cabezon, 1993-1999 Commercial Market Catch by Block (lbs.)	Cabezon, 1993-1998 CPFV Catch by Block (Number of Fish Caught)
96,000- 129,000	4,144
64,000 - 96,000	460 - 700
32,000 - 64,000	230 - 460
500 - 32,000	50 - 230

Map based on 1993-1999 PacFIN data (ports), 1993-1999 Commercial Landing Receipts (blocks), & 1993-1998 CPFV Logbook data (block centroids).

California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
October, 2000

N

Scale 1 : 1,500,000

25 0 25 50 *Kilometers*

25 0 25 *Miles*

Figure 1. (refer to table 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of Cabezon Caught and Average Price per Pound by Month

Table 1. (refer to fig. 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of Cabezon Caught and Average Price per Pound by Month

1993
Table 1a

Month	Total Pounds	Price per Pound
Jan	3,160	$2.87
Feb	2,270	$2.98
Mar	3,108	$3.18
Apr	1,256	$3.04
May	5,298	$3.14
Jun	3,952	$3.04
Jul	5,887	$3.53
Aug	3,624	$3.20
Sep	3,336	$3.21
Oct	2,834	$3.12
Nov	3,857	$3.18
Dec	728	$2.10
Total	**39,312**	**$3.15**

1994
Table 1b

Month	Total Pounds	Price per Pound
Jan	1,774	$3.17
Feb	1,855	$3.28
Mar	2,696	$3.40
Apr	3,007	$2.98
May	2,685	$3.71
Jun	4,121	$3.58
Jul	11,037	$3.13
Aug	7,553	$3.09
Sep	12,702	$3.34
Oct	14,010	$2.07
Nov	12,898	$4.35
Dec	8,585	$4.07
Total	**82,924**	**$3.31**

1995
Table 1c

Month	Total Pounds	Price per Pound
Jan	2,024	$3.38
Feb	8,636	$3.16
Mar	6,850	$3.44
Apr	7,352	$3.38
May	14,093	$3.49
Jun	15,373	$3.72
Jul	23,686	$3.80
Aug	25,662	$3.24
Sep	32,391	$3.32
Oct	27,741	$3.48
Nov	20,470	$3.26
Dec	9,537	$3.50
Total	**193,814**	**$3.44**

1996
Table 1d

Month	Total Pounds	Price per Pound
Jan	13,668	$3.60
Feb	10,270	$3.62
Mar	15,217	$3.63
Apr	12,252	$3.95
May	19,736	$3.86
Jun	27,375	$3.72
Jul	41,215	$3.09
Aug	31,101	$3.06
Sep	28,772	$3.37
Oct	18,287	$3.18
Nov	15,369	$3.47
Dec	11,967	$3.75
Total	**245,230**	**$3.44**

1997
Table 1e

Month	Total Pounds	Price per Pound
Jan	12,003	$3.83
Feb	12,438	$3.34
Mar	18,931	$3.49
Apr	20,748	$3.51
May	36,098	$3.19
Jun	21,383	$3.35
Jul	51,455	$3.15
Aug	32,077	$2.69
Sep	18,454	$2.93
Oct	21,250	$3.47
Nov	7,726	$3.52
Dec	12,171	$3.71
Total	**264,735**	**$3.25**

1998
Table 1f

Month	Total Pounds	Price per Pound
Jan	5,859	$4.02
Feb	1,834	$4.15
Mar	18,531	$3.70
Apr	27,715	$3.39
May	32,649	$3.54
Jun	46,381	$3.49
Jul	68,247	$3.14
Aug	43,275	$2.98
Sep	52,827	$3.08
Oct	43,606	$3.20
Nov	19,129	$3.54
Dec	12,706	$3.76
Total	**372,760**	**$3.31**

1999
Table 1g

Month	Total Pounds	Price per Pound
Jan	19,866	$3.62
Feb	14,049	$3.55
Mar	11,129	$3.66
Apr	19,479	$3.75
May	31,497	$3.92
Jun	57,844	$4.36
Jul	49,042	$3.61
Aug	50,113	$3.73
Sep	26,193	$3.59
Oct	22,704	$3.48
Nov	9,309	$4.09
Dec	9,825	$4.29
Total	**321,050**	**$3.83**

TOTAL
'93 - '99
Table 1h

Month	Total Pounds	Price per Pound
Jan	58,353	$3.64
Feb	51,353	$3.43
Mar	76,462	$3.57
Apr	91,809	$3.55
May	142,057	$3.56
Jun	176,429	$3.81
Jul	250,570	$3.30
Aug	193,406	$3.18
Sep	174,676	$3.25
Oct	150,433	$3.22
Nov	88,758	$3.62
Dec	65,519	$3.81
Total	**1,519,826**	**$3.44**

Figure 2. (refer to table 2) Pacific Fisheries Information Network Data (1993 - 1999)
Total Pounds of Cabezon Caught and Average Price per Pound by Month

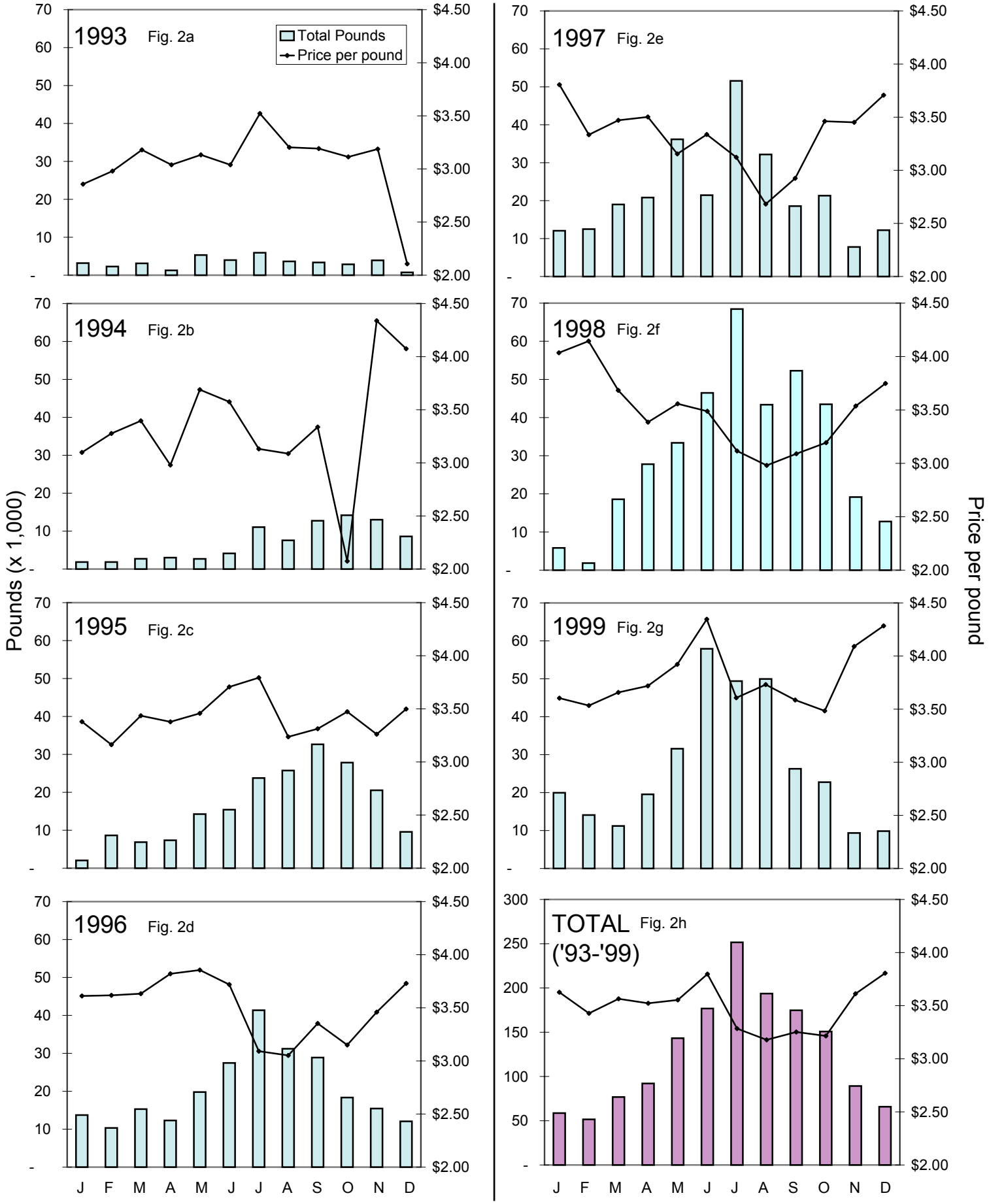


Table 2. (refer to fig. 2) Pacific Coast Fisheries Information Network Data (1993 - 1999)
Total Pounds of Cabezon Caught and Average Price per Pound by Month

1993
Table 2a

Month	Total Pounds	Price per Pound
Jan	3,191	$2.86
Feb	2,280	$2.98
Mar	3,124	$3.18
Apr	1,265	$3.04
May	5,321	$3.13
Jun	3,977	$3.04
Jul	5,924	$3.52
Aug	3,645	$3.20
Sep	3,360	$3.19
Oct	2,853	$3.11
Nov	3,920	$3.19
Dec	739	$2.11
Total	**39,599**	**$3.15**

1994
Table 2b

Month	Total Pounds	Price per Pound
Jan	1,839	$3.10
Feb	1,860	$3.28
Mar	2,699	$3.40
Apr	3,011	$2.98
May	2,691	$3.69
Jun	4,128	$3.57
Jul	11,060	$3.13
Aug	7,572	$3.09
Sep	12,726	$3.34
Oct	14,190	$2.07
Nov	13,018	$4.34
Dec	8,607	$4.07
Total	**83,401**	**$3.31**

1995
Table 2c

Month	Total Pounds	Price per Pound
Jan	2,034	$3.38
Feb	8,652	$3.16
Mar	6,867	$3.44
Apr	7,364	$3.38
May	14,258	$3.46
Jun	15,416	$3.71
Jul	23,763	$3.79
Aug	25,744	$3.24
Sep	32,652	$3.31
Oct	27,834	$3.47
Nov	20,527	$3.26
Dec	9,574	$3.50
Total	**194,685**	**$3.43**

1996
Table 2d

Month	Total Pounds	Price per Pound
Jan	13,720	$3.61
Feb	10,325	$3.62
Mar	15,292	$3.63
Apr	12,304	$3.82
May	19,788	$3.86
Jun	27,469	$3.72
Jul	41,345	$3.09
Aug	31,214	$3.05
Sep	28,878	$3.35
Oct	18,351	$3.15
Nov	15,432	$3.46
Dec	12,063	$3.73
Total	**246,181**	**$3.43**

1997
Table 2e

Month	Total Pounds	Price per Pound
Jan	12,057	$3.81
Feb	12,504	$3.33
Mar	18,991	$3.47
Apr	20,821	$3.50
May	36,181	$3.15
Jun	21,437	$3.34
Jul	51,570	$3.12
Aug	32,173	$2.68
Sep	18,561	$2.92
Oct	21,317	$3.46
Nov	7,777	$3.45
Dec	12,205	$3.71
Total	**265,594**	**$3.24**

1998
Table 2f

Month	Total Pounds	Price per Pound
Jan	5,824	$4.04
Feb	1,843	$4.14
Mar	18,580	$3.68
Apr	27,778	$3.39
May	33,384	$3.56
Jun	46,470	$3.49
Jul	68,451	$3.12
Aug	43,385	$2.98
Sep	52,284	$3.09
Oct	43,478	$3.19
Nov	19,163	$3.54
Dec	12,748	$3.75
Total	**373,388**	**$3.30**

1999
Table 2g

Month	Total Pounds	Price per Pound
Jan	19,967	$3.60
Feb	14,085	$3.53
Mar	11,205	$3.66
Apr	19,552	$3.72
May	31,576	$3.92
Jun	57,906	$4.35
Jul	49,404	$3.61
Aug	49,951	$3.73
Sep	26,269	$3.59
Oct	22,750	$3.48
Nov	9,345	$4.09
Dec	9,849	$4.28
Total	**321,859**	**$3.82**

TOTAL
'93 - '99
Table 2h

Month	Total Pounds	Price per Pound
Jan	58,632	$3.63
Feb	51,549	$3.43
Mar	76,758	$3.56
Apr	92,095	$3.52
May	143,199	$3.55
Jun	176,803	$3.80
Jul	251,517	$3.28
Aug	193,684	$3.18
Sep	174,730	$3.25
Oct	150,773	$3.21
Nov	89,182	$3.61
Dec	65,785	$3.81
Total	**1,524,707**	**$3.43**

Figure 3.(refer to table 3) Commercial Passenger Fishing Vessel Data (1993 - 1998)
Total Number of Cabezon Caught and Catch per 100 Angler Hours (CPUE)

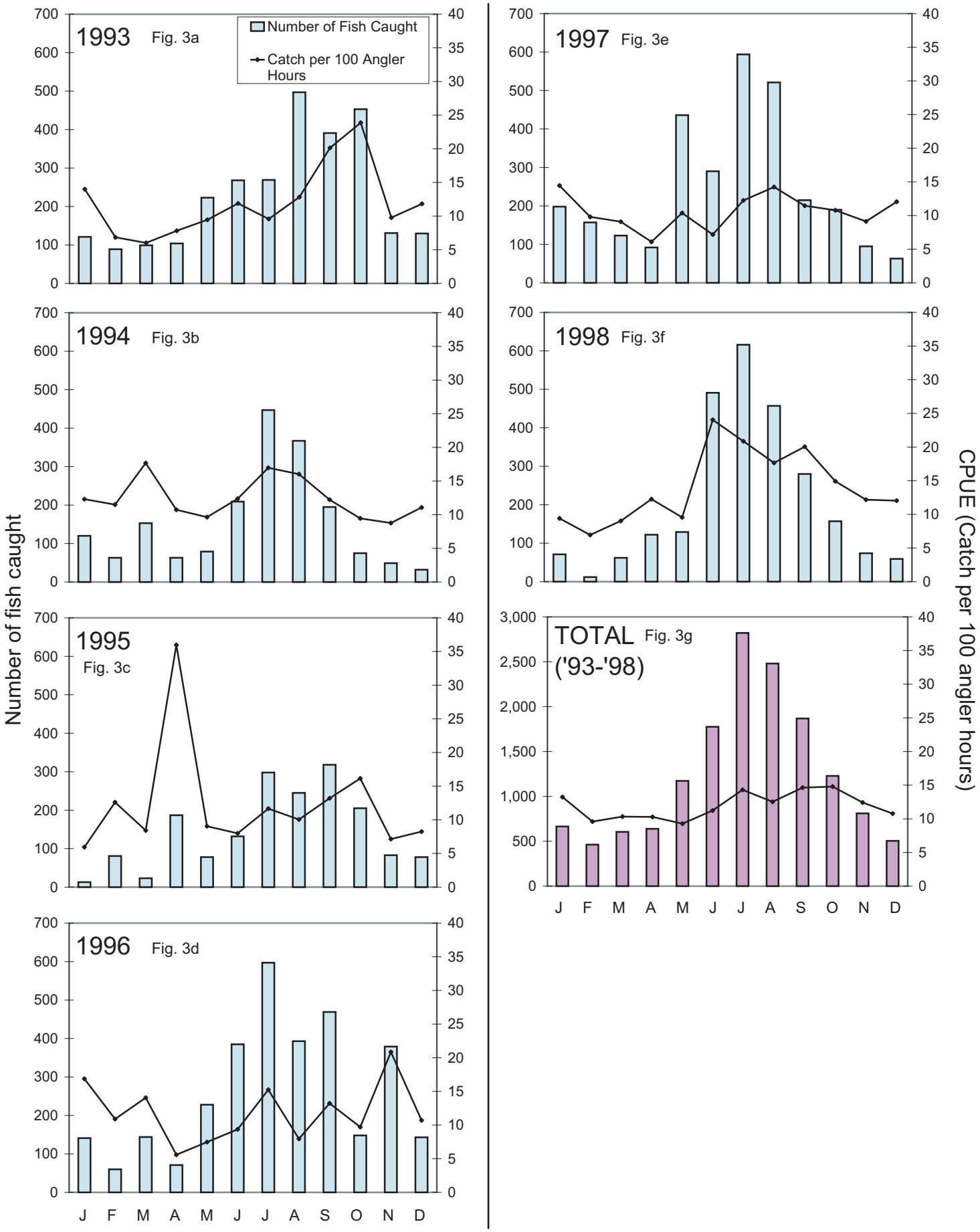


Table 3. (refer to fig. 3) Commercial Passenger Fishing Vessel Data (1993 - 1998)
Total Number of Cabezon Caught and *Catch per 100 Angler Hours (CPUE)

1993
Table 3a

Month	No. Fish Caught	CPUE*
Jan	121	14.00
Feb	89	6.85
Mar	99	6.02
Apr	104	7.82
May	223	9.46
Jun	268	11.88
Jul	269	9.58
Aug	497	12.83
Sep	391	20.14
Oct	453	23.87
Nov	131	9.78
Dec	130	11.82
Total	**2,775**	**12.22**

1994
Table 3b

Month	No. Fish Caught	CPUE*
Jan	120	12.31
Feb	63	11.50
Mar	153	17.67
Apr	63	10.73
May	79	9.63
Jun	209	12.36
Jul	447	16.97
Aug	367	16.02
Sep	195	12.23
Oct	75	9.45
Nov	49	8.77
Dec	32	11.07
Total	**1,852**	**13.57**

1995
Table 3c

Month	No. Fish Caught	CPUE*
Jan	13	5.94
Feb	81	12.60
Mar	23	8.42
Apr	187	35.96
May	78	9.05
Jun	132	7.99
Jul	298	11.66
Aug	245	10.05
Sep	318	13.20
Oct	205	16.14
Nov	83	7.14
Dec	78	8.25
Total	**1,741**	**11.64**

1996
Table 3d

Month	No. Fish Caught	CPUE*
Jan	141	16.87
Feb	60	10.89
Mar	144	14.06
Apr	71	5.59
May	228	7.47
Jun	385	9.37
Jul	597	15.24
Aug	393	7.95
Sep	469	13.22
Oct	148	9.71
Nov	379	20.85
Dec	143	10.70
Total	**3,158**	**11.31**

1997
Table 3e

Month	No. Fish Caught	CPUE*
Jan	198	14.45
Feb	157	9.80
Mar	123	9.08
Apr	92	6.09
May	436	10.38
Jun	290	7.17
Jul	594	12.25
Aug	521	14.23
Sep	215	11.45
Oct	190	10.77
Nov	95	9.13
Dec	63	12.05
Total	**2,974**	**10.70**

1998
Table 3f

Month	No. Fish Caught	CPUE*
Jan	71	9.40
Feb	12	6.94
Mar	62	9.02
Apr	122	12.26
May	129	9.56
Jun	491	24.03
Jul	616	20.85
Aug	457	17.65
Sep	280	20.04
Oct	157	14.91
Nov	74	12.17
Dec	59	12.04
Total	**2,530**	**16.76**

TOTAL
'93 - '98
Table 3g

Month	No. Fish Caught	CPUE*
Jan	664	13.23
Feb	462	9.59
Mar	604	10.33
Apr	639	10.28
May	1,173	9.28
Jun	1,775	11.24
Jul	2,821	14.31
Aug	2,480	12.53
Sep	1,868	14.63
Oct	1,228	14.79
Nov	811	12.42
Dec	505	10.78
Total	**15,030**	**12.31**

Abbreviated Life History of Cabezon (*Scorpaenichthys marmoratus*)

The cabezon is the largest member of the cottid family. In Spanish *cabezon* means big-headed or stubborn, and, proportionally, the massive head is definitely the largest feature of this fish. The specific name *marmoratus* refers to the marbled or mottled appearance of the body, which can be reddish, greenish, or bronze.

Distribution, Stock Structure and Migration

Populations range along the eastern Pacific coast from Point Abreojos, Baja California to Sitka, Alaska. Cabezon normally occur nearshore and their depth range extends from the intertidal to 335 ft. As fish get older and larger they tend to migrate into deeper water. In shallower water they migrate in and out with the tide to feed.

Age and Growth

Cabezon have been aged to a maximum age of 17 yr for males and 16 yr for females. Total lengths corresponding to these ages were 25.5 in. and 28.5 in., respectively. The largest recorded size is 39 in. in length and over 25 pounds.

Reproduction, Fecundity and Seasonality

Limited information available on age at sexual maturity suggests in central California males begin to mature in their third year and all are mature by their fourth year. The smallest mature male cabezon observed measured from 13.3 to 13.5 in. TL, and the smallest mature female cabezon observed measured 17.5 in. TL. Some females begin to mature in their fourth year between 15 and 20 in. in length, and by the sixth year all females are sexually mature. In California, spawning commences in late October, peaks in January and continues until March. Females are oviparous, meaning they lay or spawn eggs. Females spawn their eggs on intertidal and subtidal, algae-free rocky surfaces, primarily in crevices and under rocks. Masses of the pale green or reddish eggs are up to18 in. in diameter and up to two to four inches thick. Males fertilize the eggs after spawning by the female, and the male guards the nest during the 2-3 week period that the eggs mature. Fish are very protective of the nests for the two to three weeks it takes the eggs to develop and hatch. Larvae are approximately 0.1 to 0.2 in. long at hatching and begin to settle out of the plankton at 0.6 to 0.9 inches.

Natural Mortality

Estimates of natural mortality are not available for cabezon.

Diseases

No information is available concerning diseases in cabezon.

Predator/Prey Relationships

Cabezon can be aptly described as Asit and wait@ predators. Their mottled coloration lets them blend in with their surroundings as they sit motionless to wait for their next meal. With large, robust pectoral fins set low on the body and a powerful tail, they quickly lunge after unwary prey, engulfing it in their large mouth.

Adult fish eat crabs, small lobsters, mollusks (abalone, squid, octopi), small fish (including rockfishes), and fish eggs. Juveniles are taken by rockfishes and larger cabezon, as well as by lingcod and other sculpins.

Competition

Based on co-occurrence with adult and juvenile cabezon, demersal fishes associated with kelp beds and reef structure likely to compete with cabezon for food and space would include lingcod, greenlings, and rockfish species such as grass, gopher, black-and-yellow, China, quillback, copper, and vermilion.

Critical Habitat

Fish frequent subtidal habitats in or around rocky reef areas and under kelp beds. Usually solitary, juveniles and adults both are common on any rocky bottom area with dense algal growth. They are often in the vicinity of kelp beds, jetties, isolated rocky reefs or pinnacles, and in shallow tide pools. Most of their time is spent sitting in holes, on reefs, in pools, or on kelp blades beneath the canopy, but not actively swimming.

Status of Stocks

Limited information is available on population biology or changes in biomass over time.